whereas left ventricular contractility was preserved. These lasting haemodynamic gains are certainly responsible for the significant improvement in the NYHA class recorded at the latest follow up and the five year survival rate of 93 (5)%.

We consider that these satisfactory outcomes reflect the routine use of echocardiography, advancements in the quality of care offered by the cardiologists, microbiologists, anaesthetists, and intensive care specialists, and the familiarity of surgeons with MV repair techniques. Accumulated experience with various MV repair procedures probably encourages an earlier surgical intervention in the disease process before irreversible haemodynamic compromise and extensive pathological damage of the MV set in.

In conclusion, this study shows that MV repair for active culture positive IE is associated with low mortality and provides good freedom from recurrent infection, freedom from repeat operation, and survival. Hence, every effort should be made to repair infected MVs and valves should be replaced only when repair is not possible.

ACKNOWLEDGEMENTS

The authors thank the cardiac surgeons Mr J N Leverment, Mr R K Firmin, and Mr M St J Hickey for operating on some of the patients described in this paper. Thanks are also due to the cardiologists, anaesthetists, microbiologists, and staff of the echocardiographic department at Glenfield Hospital, University Hospitals of Leicester, for their contribution in the management of these patients.

Authors' affiliations

G Doukas, M Oc, C Alexiou, A W Sosnowski, T J Spyt, Department of Cardiac Surgery, Glenfield Hospital, University of Leicester, Leicester, UK

N J Samani, Department of Cardiology, Glenfield Hospital, University of Leicester, Leicester, UK

REFERENCES

1 **Castillo JC**, Anguita MP, Ramirez A, *et al*. Long term outcome of infective endocarditis in patients who were not drug addicts: a 10 year study. *Heart* 2000;**83**:525–30.
2 **Tornos P**, Permanyer-Miralda G, Olona M, *et al*. Long-term complications of native valve infective endocarditis in non-addicts: a 15-year follow-up study. *Ann Intern Med* 1992;**117**:567–72.
3 **Becker RM**, Frishman W, Frater RWN. Surgery for mitral valve endocarditis. *Chest* 1979;**75**:314–9.
4 **Grover FL**, Cohen DJ, Oprian C, *et al*. Determinants of the occurrence of and survival from prosthetic valve endocarditis: experience of the Veterans Affairs cooperative study on valvular heart disease. *J Thorac Cardiovasc Surg* 1994;**108**:207–14.
5 **Lewis BS**, Agathangelou NE, Colsen PR, *et al*. Cardiac operation during active infective endocarditis. *J Thorac Cardiovasc Surg* 1982;**84**:579–84.
6 **Gillinov AM**, Cosgrove DM, Blackstone EH, *et al*. Durability of mitral valve repair for degenerative disease. *J Thorac Cardiovasc Surg* 1998;**116**:734–43.
7 **Dreyfus G**, Serraf A, Jebara VA, *et al*. Valve repair in acute endocarditis. *Ann Thorac Surg* 1990;**49**:706–11.
8 **Hendren WG**, Morris AS, Rosenkranz ER, *et al*. Mitral valve repair for bacterial endocarditis. *J Thorac Cardiovasc Surg* 1992;**103**:124–8.
9 **Pagani FD**, Monaghan HL, Deeb GM, *et al*. Mitral valve reconstruction for active and healed endocarditis. *Circulation* 1996;**94**(suppl II):II133–8.
10 **Muehrcke DD**, Cosgrove DM 3rd, Lytle BW, *et al*. s there an advantage to repairing infected mitral valves? *Ann Thorac Surg* 1997;**63**:1718–24.
11 **Lee EM**, Shapiro LM, Wells FC. Conservative operation for infective endocarditis of the mitral valve. *Ann Thorac Surg* 1998;**65**:1087–92.
12 **Podesser BK**, Rodler S, Hahn R, *et al*. Mid-term follow-up of mitral valve reconstruction due to active infective endocarditis. *J Heart Valve Dis* 2000;**9**:335–40.
13 **Senni M**, Merlo M, Sangiorgi G, *et al*. Mitral valve repair and transesophageal echocardiographic findings in a high-risk subgroup of patients with active, acute infective endocarditis. *J Heart Valve Dis* 2001;**10**:72–7.
14 **Sternik L**, Zehr KJ, Orszulak TA, *et al*. The advantage of repair of mitral valve in acute endocarditis. *J Heart Valve Dis* 2002;**11**:91–7.
15 **Iung B**, Rousseau-Paziaud J, Cormier B, *et al*. Contemporary results of mitral valve repair for infective endocarditis. *J Am Coll Cardiol* 2004;**42**:386–92.
16 **Mullany CJ**, Chua YL, Schaff HV, *et al*. Early and late outcome after surgical treatment of culture-positive active endocarditis. *Mayo Clin Proc* 1995;**70**:517–25.
17 **Alexiou C**, Langley SM, Stafford H, *et al*. Surgery for active culture-positive endocarditis: determinants of early and late outcome. *Ann Thorac Surg* 2000;**69**:1448–54.
18 **Carpentier A**. Cardiac valve surgery: the ''French correction''. *J Thorac Cardiovasc Surg* 1983;**86**:323–37.
19 **Sand ME**, Naftel DC, Blackstone EH, *et al*. A comparison of repair and replacement for mitral valve incompetence. *J Thorac Cardiovasc Surg* 1987;**94**:208–19.
20 **Perier P**, Deloche A, Chauvaud S, *et al*. Comparative evaluation of mitral valve repair and replacement with Starr, Bjork, and porcine valve prostheses. *Circulation* 1984;**70**:I187–92.
21 **Goldman ME**, Mora F, Guarino T, *et al*. Mitral valvuloplasty is superior to valve replacement for preservation of left ventricular function: an intraoperative two-dimensional echocardiographic study. *J Am Coll Cardiol* 1987;**10**:568–75.
22 **Alexiou C**, Langley SM, Stafford H, *et al*. Surgical treatment of mitral valve endocarditis: predictors of early and late outcome. *J Heart Valve Dis* 2000;**9**:327–34.
23 **Verheul HA**, van den Brink RB, van Vreeland T, *et al*. Management of active infective endocarditis and outcome in a 25-year period. *Am J Cardiol* 1993;**72**:682–7.
24 **Croft CH**, Woodward W, Elliot APJ, *et al*. Analysis of medical versus surgical therapy in active complicated native valve endocarditis. *Am J Cardiol* 1983;**51**:1650–5.